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Vol. I

March, 1939

No. 3

Dr. Knight, Dr. Skinner, Mr. Herrick, Mr. McCrory, and Dr. Kunsman appeared before the House Appropriation Subcommittee on Agriculture on February 15, 16, and 17, in support of the budget for the Bureau for the fiscal year 1940. The budget for 1940 has been submitted on the basis of the new Bureau organization under the title "Bureau of Agricultural Chemistry and Engineering". While the fund for the four regional research laboratories is carried in the Agricultural Adjustment Administration appropriation, the budget for the laboratories was presented at this Bureau hearing, as the administration and operation of these laboratories has been placed by the Secretary in the Bureau of Chemistry and Soils and its successor organization, the Bureau of Agricultural Chemistry and Engineering. Dr. Jardine, Director of Research of the Department, also appeared with the Bureau group.

In the estimates for the regular appropriations of the Bureau there were two items of increase - \$19,000 for the expansion of the building and equipment of the Citrus Byproducts Laboratory at Winter Haven, Florida, and \$25,000 for the Division of Plans and Service of the Agricultural Engineering Investigations. The latter item being a matter of general Department interest, Mr. F. J. Sette of the Secretary's Office, also testified in its support.

The Subcommittee recalled the witnesses again on Friday morning, March 3, for additional information with regard to the regional research laboratories program.

* * *

Dr. Henry G. Knight delivered an address before the Western New York section of the American Chemical Society at Niagara Falls, N.Y., on March 21. The subject of his address was "The Human Equation in Chemistry."

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Early in March S. H. McCrory conferred with J. W. Simons at Athens, Ga., regarding the experiments on comfort conditions in farm houses, and visited the soil tillage laboratory at Auburn, Ala., which is under the supervision of R. M. Merrill. He spent several days at Stoneville, Miss., conferring with Chas. A. Bennett and others regarding the integration of the project of the cotton ginning laboratory on pressing and packaging cotton with other phases of the laboratory work.

* * *

Regional Research Laboratories

Temporary field headquarters of the four regional research laboratories have been established as follows:

Eastern Regional Research Laboratory

Rex. E. Lothrop, Acting Director
George P. Wolf, Business Manager
Box 4030, Chestnut Hill Station
Philadelphia, Pennsylvania.

Southern Regional Research Laboratory

Harry P. Newton, Acting Director
Preston L. Gise, Clerk
508 Queen and Crescent Building
344 Camp Street,
New Orleans, Louisiana.

Northern Regional Research Laboratory

Dr. Louis B. Howard, Acting Director
Miss Myrtle Mohagen, Assistant Business Manager
Commercial Merchants Bank Building, Room 515,
301 South Adams Street,
Peoria, Illinois.

Western Regional Research Laboratory

Ray H. Nagel, Acting Director,
A. P. Aanestad, Business Manager
335 Hilgard Hall,
University of California
Berkeley, California

The Directors of the Regional Research Laboratories P. A. Wells, Eastern, D. F. J. Lynch, Southern; Dr. O. E. May, Northern; Dr. T. L. Swenson, Western, will remain in Washington for some time in connection with setting up the research programs.

P. A. Wells, Director of the Eastern Regional Research Laboratory, was in Philadelphia March 10-11, and appeared in a radio discussion on the "Farm Weekly Program" over Station W C A U Saturday, March 11. The subject of the interview was the establishment of the Eastern Laboratory

D. F. J. Lynch, Director of the Southern Regional Research Laboratory, attended the South Carolina Chemurgic Meeting in Columbia, S. C., on February 7 and presented a paper entitled "Research Attacks the Farm Surplus Problem". On February 10, Mr. Lynch spoke before the Gulf Coast Chemurgic Council at Beaumont, Texas, on "The Southern Research Laboratory", and a paper which he delivered at the Texas Cotton Association Meeting in Austin, Texas on February 17 was on the subject of "Cotton and the Southern Regional Research Laboratory."

H. T. Herrick will participate in a Science Service radio program broadcast by W J S V of the Columbia System, at 6:15 on Saturday March 25.

* * *

Food Research Division

E. M. Chace, in charge of the Fruit and Vegetable Chemistry Laboratory of the Food Research Division at Los Angeles, arrived in Washington, D. C., on February 27, for conferences with Division and Bureau officials relative to the research work. On his way East he stopped at Weslaco, Texas, to confer with the personnel at that station. He left on March 12 for New York City to visit leaders in the food industries, and after a trip to Winter Haven, Florida, to look in on the U. S. Citrus Products Station, he will return to Los Angeles via Chicago.

Dr. M. K. Veldhuis and J. L. Etchells, both of the Raleigh, N.C., pickle research laboratory of the Food Research Division, attended the Pickle and Kraut Packers' Conference, in East Lansing, Michigan, February 22-24, where they presented papers relative to their investigations.

The location of the pharmacological unit of the Food Research Division at the Department of Pharmacology of Stanford University School of Medicine in San Francisco has made possible an interesting and stimulating series of scientific conferences in the department. These conferences are held bi-weekly and are attended by the entire staff of the Department of Pharmacology, the members of the Government unit, and the staff members of any other department of the School of Medicine wishing to attend. They are informal and have as their objectives the presentation, first, of the results of research conducted by the local groups and, second, of items of interest in the literature, activities in other institutions, etc. Following each report discussion without a time limit is permitted. Because of the wide scope of interests and training of participating members, the fields of pharmacology, physiology and biochemistry are always under discussion, and current problems in both groups receive the benefit of criticism and suggestion. Close integration with various departments, such as pathology, internal medicine, and clinics, is an outstanding feature of the work in this unit.

The American Apple Institute meeting at Martinsburg, West Va., on March 17-18, was attended by Dr. Henry G. Knight and R. S. Hollingshead. Both spoke on the Bureau's work on apples.

H. C. Diehl, in charge of the Frozen Pack Laboratory of the Food Research Division in Seattle, Washington, attended a meeting of storage locker operators at the University of Illinois in Urbana on February 21-22. From Urbana Mr. Diehl went to Chicago where he consulted with various members of the food freezing industries. On February 28 he arrived in Washington, D. C., for conferences with Bureau and Division officials regarding his station work, and after a trip to New York City to discuss the freezing preservation of foods with leaders in that industry will return to Seattle.

The Chief of the Food Research Division, Dr. F. C. Blanck, left on March 15, for a short visit to the Winter Haven, Florida, citrus research laboratory of that Division. He was accompanied by E. M. Chace.

Interesting visitors to the Cereal Section of the Food Research Division on March 3 were Dr. Miller, for several years in charge of the Seventh Day Adventists' Medical Mission in Hangkow, China, and Dr. T. A. Weber, who has spent the past three and one-half years in Japan. The latter will be remembered as having given an excellent illustrated lecture on soybeans before the Association of Official Agricultural Chemists meeting in 1933. Both of these men are much interested in dietary problems, especially in the use of soybeans (as flour and in milk), having made a study of the food deficiencies of the diet of the Chinese and Japanese.

Sam R. Hoover of the Food Research Division has just returned from a two weeks' visit to Chicago, Ottumwa, Iowa, and Omaha, Nebr., where he visited various egg packing plants, for the purpose of studying designs of manufacture of egg oiling processing plants and observing the different methods employed in the industry.

* * *

Division of Mechanical Equipment

R. M. Merrill visited Marx Brothers, pecan crackers and shippers, at Birmingham, Ala., on March 1 to discuss problems of equipment for processing pecans.

Frank Irons spent March 15 to 17 inclusive at Washington discussing problems relating to the project on pest control. Officials of the Bureau of Entomology and Plant Quarantine were consulted relative to the issuance of mimeographed instructions on the construction and use of a grasshopper poison bait distributor which Mr. Irons has developed. By means of these instructions thousands of distributors will be constructed throughout the grasshopper infested region to combat this menace which in 1938 damaged the farmers' crops to the extent of nearly 100 million dollars.

During parts of February and March, E. M. Mervine was at Davis, Calif. consulting with members of the Agricultural Engineering Department of the University of California and with S. W. McBirney of the Bureau. The sugar beet machinery project, started by Mervine and McBirney, has recently been given additional support at the University.

On February 24 and 25 a group of sugar beet and bean growers from Ventura and Yolo Counties visited the University Farm at Davis, Calif. A two-day program had been arranged for them by the Extension Service under the direction of J. P. Fairbank, Extension Specialist in Agricultural Engineering. One day was devoted to a discussion of beet problems, half of the day being given over to the experimental work on beet machinery. Talks were given on the different phases of the work and the experimental beet machinery was displayed and demonstrated.

* * *

Cotton Ginning Work

On February 17 the Ginning Laboratories were visited by more than 100 tourists from Iowa. They spent about an hour at Stoneville inspecting the equipment and learning facts relating to ginning of cotton. During February the Laboratories were also visited by representatives of each of the large concerns which manufacture ginning machinery in connection with this office's purchase of a South American type high density press for the study of high density pressing and packaging.

A delegation of cotton planters from Madison Parish, La., visited the Laboratories on March 3 to obtain information relative to the installation of a roller ginning establishment for handling a heavy acreage of Sea Island cotton which is expected to be planted there during the coming year.

On Sunday, March 5, P. K. Norris, who has charge of the special cotton export program under the A.A.A., visited Stoneville and observed the extensive preparations which are being made for the installation of high density presses for studies of pressing and packaging cotton at the Laboratories. A special large press pit is being concreted to receive the high pressure pumps and press sills; the 3-80 gin outfit is being revamped to accommodate a special extracting-drying system necessary to reproduce Texas arid conditions; and the 40 by 120 feet all steel research building is receiving its iron roofing, sheathing and side walls for compositing the seed cotton and storage of the bales. A large amount of preliminary work incidental to the Bankhead-Jones research project is necessary in order to begin the program promptly with the coming season. Mr. Norris expressed pleasure at the progress made thus far.

The Delta Branch Experiment Station recently suffered a severe loss by fire which destroyed a large barn, supplies of seed, and a large number of cultivating machines. Much publicity was given to the small yearling bull of the Station named Ferdinand who led the mules to safety from the burning structure but afterward died from exhaustion and exposure. The wire inserted plate glass panels of the government classing room which faced the fire were cracked by the intense heat

although the wind was away from the Laboratories and the fire was some 180 feet across the creek.

The termination of the W.P.A.-P.W.A. program at the Cotton Ginning Laboratories is now in sight. This program will provide the Laboratories with an all-steel research building, complete various other structures on the premises, and fit up the Fiber Laboratory and Office building so that its entire three floors may be occupied.

W. H. Kliever, Engineer Physicist at the Cotton Ginning Laboratories, has been employing a special titanium tetrachloride smoke stream in recent cotton gin fan tests. This apparatus is being used with a view to a more exact study of turbulence and cavitation in connection with fans and their loss of efficiency.

* * *

Fiber Flax Investigations

W. M. Hurst discussed the work done by the Bureau of Agricultural Engineering on forage drying at the Pacific Northwest Rural Electrification Conference, Portland, Oregon, on January 26.

At Corvallis, Oregon, work is underway in developing improved fiber-flax machinery in an effort to reduce costs of harvesting and processing. A flax pulling attachment for a grain binder is under construction and a puller of the type commonly used in Oregon is being altered to make it possible to pull the flax at the stage of growth for the highest quality fiber and maximum returns to the farmer.

A flax deseeding designed for greater capacity with less labor than the type commonly used is also under construction.

* * *

Chemical Engineering Research Division

Dr. D. J. Price spent February 20 in Pittsburgh where he attended a meeting of a special committee of the National Fire Protection Association, for the purpose of revising the safety code for the prevention of dust explosions in the manufacture of aluminum bronze powder. February 21 he spent in Chicago attending a conference at the National Safety Council with a view to developing a program of rural community safety. Returning to Washington, he stopped in Harrisburg, Pa., for an interview with the Director of Public Safety of Pennsylvania for the purpose of interesting the latter in membership on the Dust Explosion Hazards Committee of the National Fire Protection Association.

On March 3 Dr. Price left Washington with H. T. Herrick to visit the sites of the Regional Research Laboratories at Peoria, Ill., Albany, California, and New Orleans, La. The itinerary also included Chicago, San Francisco, Los Angeles, and Atlanta, Ga., where Dr. Price had arranged numerous conferences in connection with the dust explosion and farm fire prevention activities of the Chemical Engineering Research Division.

H. R. Brown went to New York on February 20 to attend a meeting of the Conveyor Code Committee of the American Standards Association which is endeavoring to prepare a safety code for the operation of conveyors and conveying equipment. On the same trip he conferred with members of the American Spice Trade Association concerning the operation of a safety code for the prevention of dust explosions in spice, drug, and insecticide grinding.

On February 28 and March 1 Mr. Brown attended meetings of the National Fire protection Association Committee on Blower Systems in New York. This committee is preparing a code for the safe installation and operation of air conditioning equipment, warm air heating apparatus, and blower systems for dust and vapor removal. This work ties in closely with the work of the Dust Explosion Hazards Committee, and arrangements were made to include in the safety codes necessary precautions to eliminate the dust explosion hazard incident to the operation of such equipment.

Messrs. H. E. Roethe and E. J. Hoffman spent considerable time in assisting the Committee on Spontaneous Heating and Ignition of the National Fire Protection Association in formulating a program of activity on the investigation of mysterious fires in stored sugar, with special reference to the susceptibility of sugar to spontaneous heating and ignition. This work included a careful review of the limited research that has been made on the subject.

Because of the importance of the fume hood in the new air-conditioned Regional Laboratories, a special fume hood is being designed. In addition to designing it, a working model of this hood has been set up at Arlington Farm and is being proven under actual operating conditions in order that the air-conditioning system will not be burdened and that the hood will function properly when installed.

Mr. Wieland, Chemical Engineering Research Division, is designing the hood and Engineers Naffzinger and Colker are conducting the tests on the working model.

* * *

Hide and Leather Section

On February 17, Dr. Evan I. Wheaton, bacteriologist of the American Can Company, Maywood, Ill., visited the laboratories of the Section. Dr. Wheaton discussed research work being conducted by the American Can Company in cooperation with the East and West Coast salted fish industries. The particular problem considered was the prevention of the development of reddening organisms in salt-cured fish. The Hide and Leather Section has studied microorganisms of this type in salted hides and has found that their development may be quite effectively controlled by regulation of such factors as moisture content, kind of salt employed, and the use of inhibitors.

Dr. J. M. Aikman, co-operative agent of the Soil Conservation Service, and a member of the staff of Iowa State College, visited the Section on February 27. Dr. Aikman, who is making an ecological study of the important sumacs of Iowa, was particularly interested in the effective coordination of his work on Iowa sumacs with that which the Section is conducting on the development of American sumacs. Leaves of some samples of sumac contain from 35 to 40 percent tannin and are considered promising as possible sources for the economic production of tannin.

* * *
Division of Structures

In March Dr. Knight visited the project at Athens, Georgia, where studies are being made of the effect of design and type of construction of farm buildings on comfort conditions in them. A large amount of data has been accumulated and the big problem now is to analyze this material and prepare a publication without interfering too much with continuance of the investigations. J. W. Simons, gave a talk entitled "Designing Farm Homes for Comfort", on the "Welcome South, Brother", radio program.

A new project on the farm storage of grain sorghums under the Special Research Fund (Bankhead-Jones) has been approved. W. V. Hukill and W. R. Humphries left on March 4 for Manhattan, Kans. for conference with Dean Call and Professor F. C. Fenton of Kansas State Agricultural College and members of the A.A.A., Soil Conservation Service, and Farm Security Administration, regarding the conduct of this experimental work. Unfortunately Mr. Humphries, who was driving, became ill at Wright City, Mo., and was delayed for several days. From Manhattan Mr. Hukill and Professor Fenton went to Ft. Hays, Kans., where arrangements for conduct of the experimental work were completed in consultation with Mr. Aicher, Superintendent of the Ft. Hays Experiment Station, and W. R. Swanson of this Bureau.

Arrangements were made to buy 2,000 bushels of the grain sorghum and place it in experimental bins to determine the effect of ventilation in reducing deterioration, especially during the spring months. A field survey is also to be made by Mr. Humphries and Professor Fenton in Kansas. After the survey in Kansas is completed, it is expected that similar surveys will be made in Oklahoma and Texas and perhaps in adjoining States.

J. R. McCalmont went to Beemerville, N.J. with H. E. Besley of the New Jersey Experiment Station to plan the experimental setup necessary in connection with the cooperative study of the design of silos for green crop silage.

J. W. Rockey and S. P. Lyle attended a conference on farm lighting and electrification at the Nela Park Laboratory of the General Electric Company at Cleveland.

Miscellaneous Publication 319, Plans of Farm Buildings for Western States, has just been released. This is a compilation of some 115 plans suitable for the Western States. It is available to the general public by purchase only, for 60 cents, from the Superintendent of Documents, Government Printing Office, Washington, D. C.

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Recent Appointments (Indefinite or Probationary)

| | | |
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| Agnes M. Biebler | Sr. Operative (Asst. Bookkeeper) | Business Admin. |
| Arthur Bramley | Collaborator | Fertilizer Res. |
| Stanford W. Briggs | Under Scientific Helper (Urbana, Ill.) (Part time) | Ind. Farm Prod. Research |
| Ray H. Coulter | Minor Scientific Helper (Pullman, Wash.) | Food Research |
| Lucille Cramer | Jr. Clerk-typist | Business Admin. |
| E. Elliott Gibbens | Collaborator (Part-time) (Hays, Kans.) | Structures |
| James Henry Gross | Jr. Laborer | Fertilizer Res. |
| John W. Kirstein | Agent (Ames, Iowa) | Structures |
| Leonard M. Klein | Jr. Mechanical Engineer (Corvallis, Ore.) | Fiber Flax Proc- essing Inv. |
| Robert T. Livingston | Laborer (Laurel, Miss.) (wae) | Carbohydrate Res. |
| R. Tynes Smith, Jr. | Agent (Part-time) (Baltimore, Maryland) | Structures |

Recent Appointments (Temporary)

| | | |
|-------------------------------|--|----------------------------|
| Ralph J. Blair | Agent (Blacksburg, Va.) | Rural Electrifi- cation |
| Ronald T. Bowman | Sr. Mechanical Draftsman | Plans & Service |
| Mrs. Gwendolyn E. Chambers | Asst. Clerk-Stenographer | Chem. Engr. Res. |
| James W. M. Dean | Asst. Civil Engineer | Plans and Service |
| Laurence Fisher | Assoc. Mechanical Engr. | " " " |
| Julian M. Fore | Agent (Lafayette, Ind.) | Rural Elec. |
| Mae Grahek | Jr. Steno. (Berkeley, Calif.) | Reg. Res. Labs. |
| Melville C. Hall | Asst. Civil Engineer | Plans and Service |
| Truman E. Henton | Agent (Lafayette, Ind.) | Rural Elec. |
| Mrs. Isabelle E. Johnson | Typist (part-time) (Yakima, Wash.) | Irrigation |
| Waban C. Kreuger | Sr. Research Agricultural Engr. (New Brunswick, N.J.) | Rural Elec. |
| Herman F. Kuzel | Associate Architect | Plans & Service |
| Bernice C. Larson | Junior Stenographer | " " " |
| Leo V. Navitsky | Associate Architect | " " " |
| John E. Nicholas | Sr. Research Agricultural Engineer (State College, Pa.) | Rural Elec. |
| William N. Olewiler | Asst. Civil Engineer | Plans and Service |
| Carl C. Pribek | Associate Architect | " " " |
| Wilson R. Rinehart | Asst. Mechanical Engineer | " " " |

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| Mrs. Sue Rose | Jr. Stenographer (Wyndmoor, Pa.) | Reg. Res. Labs. |
| Mildred Rosendorf | Jr. Stenographer | Plans & Service |
| Mary R. Speicher | Jr. Stenographer | " " " |
| Mrs. Mary B. Stein | Jr. Steno. (New Orleans, La.) | Reg. Res. Labs. |
| John L. Swinnerton | Associate Architect | Plans & Service |
| H. W. Taylor | Mechanic's Helper (Corvallis, Ore.) | Fiber Flax Processing Inv. |
| M. Harry Weeks, Jr. | Surveyman (Phila., Pa.) | Plans & Service |
| Hugh E. Wilkinson | Machinist's Helper (Stoneville, Miss.) | Cotton Ginning Investigations |
| Lois C. Williamson | Asst. Clerk-Steno. (Urbana, Ill) | Ind. Farm Prods.Res. |
| Herbert F. Ziegler | Associate Architect | Plans & Service. |

Separations

| | | |
|-------------------------|---|-----------------------|
| Joseph J. Adams | Asst. Land Appraiser (Vicksburg, Miss.) | F.L.D.-Flood Control |
| Theron M. Ashcroft | Agent (Logan, Utah) | Irrigation |
| William B. Baker | Computer, (Vicksburg, Miss.) | F.L.D.- Flood Control |
| Jesse W. Brasher | Asst. Land Appraiser (Vicksburg, Miss.) | " " " " " |
| Emile H. Brie | Chief Engineering Draftsman | Plans & Service |
| Arthur F. Brown | Assoc. Civil Engineer (Vicksburg, Miss.) | F.L.D.- Flood Control |
| Mrs. Dorothy L. Chattin | Jr. Steno. (Vicksburg, Miss.) | " " " " " |
| Everett B. Cooner | Asst. Land Appraiser (Vicksburg, Miss.) | Structures |
| Raymond H. Corliss | Architectural Draftsman | F.L.D.- Flood Control |
| Hubert E. Cox | Asst. Land Appraiser (Vicksburg, Miss.) | " " " " " |
| Dominic V. DeCesare | Asst. Clerk (Vicksburg, Miss.) | Business Admin. |
| Paul W. Griffin | Asst. Land Appraiser (Vicksburg, Miss.) | Carbohydrate Res. |
| Mrs. Martha K. Guy | Jr. Clerk-Typist | F.L.D.- Flood Control |
| Elmer Harris | Jr. Sugar Tech. (Baton Rouge, La.) | " " " " " |
| Chris R. Henderson | Asst. Land Appraiser (Vicksburg, Miss.) | " " " " " |
| John B. Howie, Jr. | Jr. Clerk-Typist | " " " " " |
| James W. Kirkwood | Junior Steno. (Vicksburg, Miss.) | Rural Electrification |
| Jack Kraning | Assoc. Engr. Appraiser (Vicksburg, Miss.) | F.L.D.- Flood Control |
| Waban C. Kreuger | Sr. Rodman (Vicksburg, Miss.) | " " " " " |
| Jack H. Lane | Sr. Research Agricultural Engr. (New Brunswick, N.J.) | Irrigation |
| Mortimer R. Lewis | Sr. Clerk (Vicksburg, Miss.) | Rural Electrification |
| S. P. Lyle | Sr. Agricultural Engr. (Corvallis, Ore.) | Reg. Res. Labs. |
| Bessie V. McCoy | Principal Agr. Engr. | F.L.D.- Flood Control |
| Florence E. Mitchell | Asst. Clerk-Steno. | |
| | Jr. Steno. (Vicksburg, Miss.) | |

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|------------------------|---|-----------------------|
| P. T. Montfort | Sr. Research Agr. Engr. (College Station, Texas.) | Rural Electrification |
| E. Virginia Mott | Junior Stenographer | Plans and Service |
| Harry G. Nickle | Asst. Irrig. Engr. (Prosser, Washington) | Irrigation |
| Geo. L. Orr | Assoc. Land Appraiser (Vicksburg, Miss.) | F.L.D.- Flood Control |
| John B. Owens | Asst. Land Appraiser | " " " " " |
| O. M. Page | Sr. Agricultural Engineer (Vicksburg, Miss.) | " " " " " |
| Mary E. Parker | Jr. Typist (Vicksburg, Miss.) | " " " " " |
| William J. Patterson | Computer, (Vicksburg, Miss.) | " " " " " |
| John A. Pheeney | Asst. Land Appraiser (Vicksburg, Miss.) | " " " " " |
| Luther L. Rogers | Jr. Clerk-Typist (Vicksburg, Miss.) | " " " " " |
| Chauncey B. Schmeltzer | Engr. Appraiser (Vicksburg, Miss.) | " " " " " |
| J. Roy Simpson | Jr. Clerk-Typist (Vicksburg, Miss.) | " " " " " |
| Delbert M. Tilson | Asst. Land Appraiser (" " ") | " " " " " |
| Elizabeth E. VanZandt | Asst. Clerk-Stenographer | Reg. Res. Labs. |
| Walter A. Vaught | Assoc. Drainage Engineer (Vicksburg, Miss.) | F.L.D.- Flood Control |
| Harold H. Waddel | Jr. Civil Engineer (Vicksburg, Miss.) | " " " " " |
| Alexander H. West | Asst. Land Appraiser (Vicksburg, Miss.) | " " " " " |
| James R. White | Asst. Land Appraiser (Vicksburg, Miss.) | " " " " " |

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